



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

BULLETIN  
OF THE  
TORREY BOTANICAL CLUB.

Vol. XI.]

New York, February, 1884.

[No. 2.]

Fresh-Water Algæ. VIII.

By FRANCIS WOLLE.

(Plate XLIV.)

In the summer of 1883 I made my tenth annual visit to the haunts of fresh-water Algæ, choosing those in our neighboring State of New Jersey where the ponds are more numerous as well as more accessible than in Pennsylvania. In the vicinity of Ocean Beach, Monmouth Co., there is a number of what may be termed small lakes, the waters of which, though separated from the ocean by only a narrow strip of land, are very clear and fresh. Therein are to be found many interesting plants; among others I saw, for the first time, *Utricularia inflata*, a very distinct and beautiful species of bladderwort, swimming free by means of the inflated petioles, arranged in a whorl, bearing in the centre a perpendicular scape with large yellow flowers.

From among the aquatic plants I gathered many algæ, and, among these, the following desmids new to our flora:

*Cosmarium depressum*, Næg., and *C. obsoletum*, Reinsch; *Staurastrum pachyrhynchium*, Nord. (Plate XLIV., Figs. 32-36); *S. monticolum*, Lund. (Figs. 24-26; and

*S. IOTOMUM*, *n. sp.* (Figs. 5-7)—Very minute; semicells quadrangular, angles drawn out into thin, diverging, granular rays, each about as long as the diameter of the body, apices obtuse; end view triradiate. Diameter, including the rays, 15-20 $\mu$ .

A small species, quite plentiful at Ocean Beach and at Malaga, N. J.

Two other desmids, not new, but rare, were also found here, viz: *Cosmarium sportella* and *Euastrum attenuatum*.

From the ponds in the vicinity of Malaga, Gloucester County, I was fortunate enough to secure five new desmids, viz.:

*Staurastrum leptacanthum*, var. *TETROCTOCERUM*, *n. var.* (Figs. 29-30)—Semicells suborbicular furnished with eight, long, thin rays, deeply forked, or clawed at the ends; this whorl rather below the middle, and another above it with four similar rays; end view octangular, each angle produced into a long thin ray; between the margin and the centre are four more rays. Membrane smooth. Diameter of body 25 $\mu$ ; including the rays 75-80 $\mu$ .

The only essential distinction between this form and the typical Brazilian plant is that ours has *eight* and four rays in the two whorls, and the Brazilian plant has *six* and four rays.

Collected in pond near Malaga, N. J.

*S. QUATERNIUM*, *n. sp.*—Small, smooth, quadrangular in front view, deeply constricted; sinus acute angled, much amplified; semicells oblong, sides rounded, end truncate, each angle furnished with

four firm aculei; end view triangular, sides concave, angles broadly rounded and furnished with four aculei. Diameter  $25\mu$ ; with aculei  $40-50\mu$ .

Ponds, Malaga, N. J., and Wilkesbarre, Penn.

*S. ANKYROIDES*, *n. sp.* (Fig. 4.)—About as long as wide, granularly rough; semicells cylindrical, with enlargement towards the convex ends; sides produced into narrow, elongate, slightly tapering, incurved arms; margins granulate crenate, apices bifurcate; end view quadrangular, with angles drawn out into long arms. Diameter  $82\mu$ . Length  $75\mu$ .

The only water which hitherto furnished this new species was a pond near Malaga, N. J. Var. *HEXACERUM*, *n. var.* Somewhat stouter than the typical form and furnished with *six*, instead of *four* arms.

This variety I find in northern counties of New Jersey. In the possession of six arms it bears a resemblance to *St. coronulatum*, but, being nearly twice the length, and without the crown, it appears more nearly related to *St. ankyroides*.

*COSMARIUM SEJUNCTUM*, *n. sp.*—Membrane smooth, slightly longer than broad; semicells semicircular, with angles rounded, separated by a wide, nearly linear sinus; isthmus narrow, less than one-fourth the diameter of the cells. Diameter  $20-25\mu$ .

Ocean Beach, etc., N. J.

*MICRASTERIAS DICHOTOMA*, *n. sp.*—Semicells three-lobed; lateral lobes twice bifid; the ultimate lobules (four resulting from one), deeply furcate or clawed at their apices; the polar, or end lobe, exserted, on a cylindrical neck, with two diverging arms, clawed at the ends. Diameter  $175-200\mu$ .

Ponds, Malaga, N. J., Harvey Lake, Penn.

A visit to Brown's Mills, Burlington County, demonstrated how the most unpromising fields will sometimes at last reward the perseverance of the patient explorer, for at this place I have hitherto met with very poor success. But last August I was rewarded by the discovery of twelve new plants, viz.:

*Cosmarium pseudotoxichondrum*, Nord.

*Staurostrum elongatum*, Barker, var. *TETRAGONUM*, *n. var.* (Fig. 31.)

*S. forficulatum*, Lund., forma *TETRAGONA* (Figs. 16 and 17), and forma *TRIGONA* (Figs. 18 and 19.)

*S. ASPINOSUM*, *n. sp.* (Figs. 22 and 23)—Semicells smooth, in front view oval with end protracted into a colorless arm, about three times as long as the breadth of the body, diverging; apices tricuspidate, margins rough with minute, firm perpendicular, irregularly placed, aculei. End view triradiate. Spread of arms  $58-63\mu$ .

Brown's Mills, New Jersey.

The vertical spines, like the thorns of a rose, give this plant a distinctive character.

*S. inconspicuum*, Nord.

*Docidium dilatatum*, Cleve.

*D. TRIDENTULUM*, *n. sp.*—Cells slender, elongated, linear or slightly tapering, smooth; semicell with a prominently inflated base;

apex crowned with a few large teeth, usually three in view. Diameter  $12-13\mu$ .

Ponds, Pleasant Mills, and Browns Mills, N. J.

PHYMATODOCIS NORDSTETIANUM, *n. sp.*—(This genus is based on a plant found in Brazil, in character near the genus *Desmidium*). Cells closely united in sheathless filaments; deeply constricted in the middle; filaments quadrangular with sides longitudinally excavated.

The new species, hitherto found only in a pond at Brown's Mills, New Jersey, differs from the Brazilian plant in being one-fourth smaller, in having the lobes in end view straight, not curved to one side, and in having the sinuses of the cells not narrow linear, but somewhat enlarged inwardly and rounded at the base.

*Desmidium (Didymoprium) quadratum*, Nord.

D. ELONGATUM, *n. sp.*—Filaments thin; cells in front view nearly twice as long as wide; in side view nearly 2.5 times longer than broad; closely united, without a thickened border at their junction; end view broadly elliptic. Diameter at widest part,  $28\mu$ , thickness,  $16-18\mu$ .

This interesting new species from a pond at Brown's Mills, New Jersey, was found late in September last. No gelatinous sheath was observable.

*Hyalotheca undulata*, Nord., and *Penium Clevei*, Lund.

Further north, in Passaic County, the ponds known there as Wood, Longwood, Green and Buckaberry, furnished many algæ, including a number of desmids. A very interesting plant was *Pleurocarpus mirabilis*. Through nine consecutive seasons I had carefully sought for this *in fruit*, and only came across it, in this my tenth annual search, in Buckaberry Pond; and, oddly enough, it was found about the same time by my friend Miss Butler, of Minneapolis, then on a visit at Malden, Mass. These are, I believe, the only two places where it has been detected, although Mr. E. L. Cheeseman, of Knowlesville, N. Y., discovered it in his aquarium a year earlier.

The new desmids from these waters are:

*Euastrum abruptum*, Nord.

E. URNÆFORME, *n. sp.*—Semicells urn-shaped, three-lobed; terminal lobe dilated, centrally sinuate; lateral lobes horizontal with sides converging, sinuate; basal portion protruding, emarginate; upper part broadly rounded; a rounded sinus between it and the end lobe; protuberances, one at each angle of the terminal lobe, one at each of the basal angles, two intermediate and one between the end and the lateral lobes. Diameter  $55-60\mu$ .

Wood Lake, Passaic Co., N. J.

E. COMPACTUM, *n. sp.*—Very small, suborbicular, slightly longer than broad; semicells broad, transversely oval; apex a slight protuberance with a linear incision; two small prominences, one on each side below the apical protuberance. Diameter  $20-22\mu$ . Length  $22\mu$ .

E. OBTUSUM, *n. sp.*—Minute, twice as long as wide; semicells obovate; base flattened, sides roundly diverging; end broadly rounded, with a linear central incision. Diameter  $14\mu$ . Length  $25\mu$ .

Ponds, Pennsylvania.

MICRASTERIAS NORDSTETIANA, *n. sp.*—Of equal length and breadth; semicells three-lobed; the lateral lobes divided into two sub-

cylindrical segments with a wide notch between, ends obtuse smooth, or provided with three or four small teeth, polar lobe exerted, neck long, with a short, conical prominence about the middle of each side; the ends broad, sinuate, with two horizontal arms on each side, one of which is long and the other short, both in the same direction, slightly diverging.

Longwood Pond, Passaic Co., New Jersey.

*Cosmarium excavatum*, Nord.; *C. Kjelmanni*, Wille; *C. Beckii*, Wille; *C. Nægeleanum*, Bréb.; and

*C. PSEUDOBROOMII*, *n. sp.* (Figs. 36 and 37).—This species is separated from *C. Broomei*, Thw., by the total absence of a central inflation.

Frequent in ponds, Sussex Co., N. J.

In a small vial of specimens gathered by Mr. E. Potts, of Philadelphia, while exploring Harvey Lake, Luzerne County, for freshwater sponges, I found the same new *Micrasterias Nordstetiana* mentioned above and one new *Staurostrum*, which I have named

*S. POTTSII*, *n. sp.* (Figs. 8 and 9).—Small, smooth; semicells in front view broadly elliptic, furnished on each side with three divergent processes, apices rounded, bearing two aculei; end view triangular, sides concave, angles broadly truncate and produced into two processes with a wide rounded sinus between; a third process from a position somewhat back of the sinus rises at an angle of about  $40^\circ$  thus constituting three diverging aculei-tipped processes at each of the three angles.

To the collections heretofore made by Miss Butler, at Minneapolis, I have to add three new names, as follows:

*Micrasterias Rabenhorstii*, Kirch.

*Cosmarium protuberans*, var. *GRANULATUM*, *n. var.* (Figs. 13–15).—Cells about one-fifth longer than broad; semicells with straight base, sides somewhat diverging from the basal line; superior angles nearly right, inferior angles obtuse; centrally inflated; seen from the vertex, elliptic with a swelling on each side; membrane granular. Diameter  $25\text{--}28\mu$ .

Separated from the typical form mainly by the rather coarsely granular membrane; the central inflation is also less prominent.

From pond a near Minneapolis, Minn.

*EUASTRUM NORDSTETEANUM*, *n. sp.*—Cells quadrangular, oblong, nearly twice as long as broad; semicells obscurely three-lobed; basal lobes broad, divided in the middle by a rounded notch into too lobules with tridentate or spinous ends; end lobe short, pouting, more or less emarginate; the two sides of apex usually inclining backward, with a subacute or rounded notch between; lateral margins furnished with two or three horizontal spines. End, transverse and side views rectangular, with broad, square, more or less sinuate ends, angles dentate.

Frequent near Minneapolis, Minn. Seen occasionally in New Jersey also.

*Xanthidium antelopæum*, var. *MINNEAPOLIENSE*, *n. var.*—A new form possessing the peculiarity of a fifth pair of aculei immediately over the central protuberance and bead-like series of granules.

My experience in the search of fresh-water algæ during the past ten years demonstrates that in New Jersey alone, hardly more than a third of the territory has been explored, and even that which has been gleaned over and over again usually presents something new and interesting wherewith to gratify the student every recurring season.

The plate which accompanies this is a copy of one of 53 (all colored) that I have prepared for a monograph on the Desmids of the United States which is now about to go through the press, and to be shortly issued to the public. It is the only work of the kind that has been published in this country, and will contain all that is known up to this period concerning our desmids, the number of which, from Wood's 160 described species, I have increased to nearly 500, and illustrated with more than 1,100 drawings sketched by myself, with very few exceptions, from living plants as they presented themselves to me in the field of the microscope. The price of the work (five dollars) will be about a third, only, of that of similar works published abroad; but, as I am desirous of exciting interest in this fascinating study, it is to be offered at a price that will reimburse me for the actual cost incurred, without reference to the time and labor that I have bestowed upon it.

EXPLANATION OF PLATE XLIV.—In addition to the species designated in the foregoing article, the following desmids are illustrated in the Plate. They are not new species but are mostly new to our flora: Figs. 1 and 2. *Staurastrum anatinum*. Cooke. Figs. 10 and 12. *St. megacanthum*, Lund. Figs. 20 and 21. *St. Dickiei*, Ralfs. Figs. 24 to 26. *St. monticulosum*, Bréb. Figs. 27 and 28. *St. striolatum*, Næg. Figs. 32 to 35. *St. pachyrhynchium*, Nord.

### New Species of North American Fungi.

By J. B. ELLIS and B. M. EVERHART.

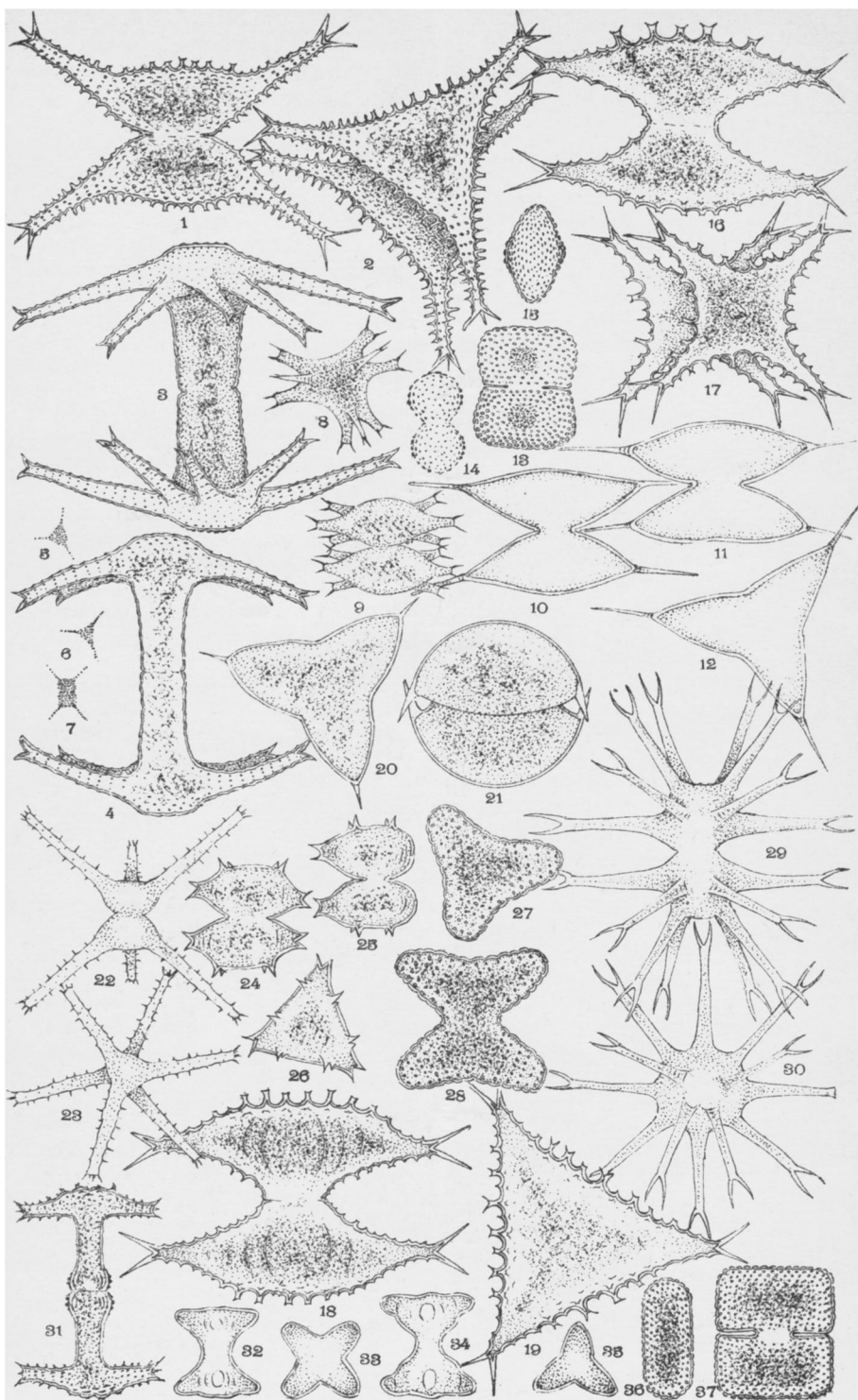
**RHIZOCTONIA MONILIFORMIS.**—Yellowish-white inside and out, cylindrical, .33–.5<sup>cm.</sup> in diameter and constricted at intervals, forming a loose net-work extending for several inches along the surface of the wood, the different parts either directly connate or attenuated at one or both ends into white, creeping fibres. Substance carnose and firm, but not as tough as in the next species.

Found under the bark of a rotten *Nyssa* log. November 1883.

**RHIZOCTONIA AURANTIACA.**—Suborbicular, flattened, 1<sup>cm.</sup> in diameter, or, by confluence, 2<sup>cm.</sup> or more, loosely attached by a few pale creeping fibres, dull liver-color outside, orange-red within, in which respect, as well as in its more regular shape, it differs from *Rh. tricolor*, Ell., which is black outside and red within.

Found under the bark of a rotten maple-limb at Newfield, N. J., at the same time as the preceding species.

**ZYGODESMUS MURICATUS.**—Purplish rose-color, becoming light buff, forming orbicular patches of a loose cottony texture, 2–4<sup>cm.</sup> across, or, by confluence, more; hyphæ 5–7 $\mu$  in diameter, strongly muricate roughened, much branched, with a strong zygoesmoid joint just above each branch, the extremities of the branches divided into numerous oblong, cylindrical basidia with four strongly developed spicules at their obtuse apices, bearing the subglobose, strongly echinulate, 5–6 $\mu$  conidia.



Desmids of the United States.